



Directorate of  
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# Science and Weapons Daily Review

**Friday**

**8 February 1985**

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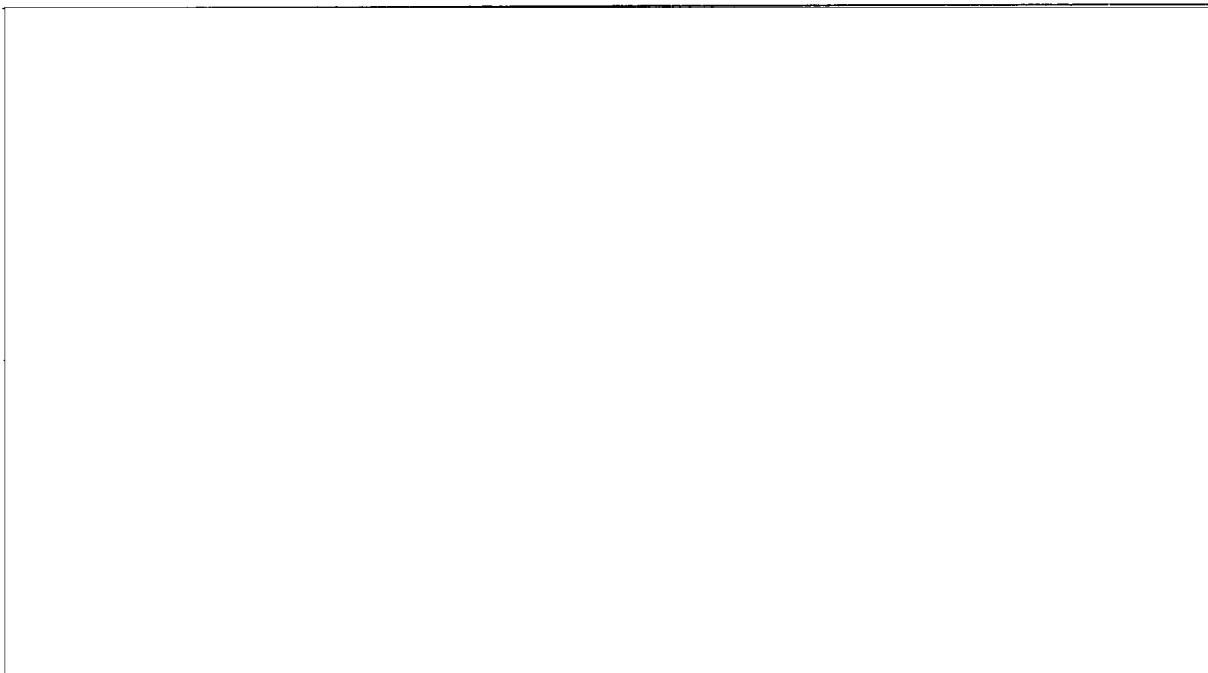
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- 1 WESTERN EUROPE: FIRST ARIANE LAUNCH OF THIRD WORLD  
COMMERCIAL SATELLITES SCHEDULED 

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An Ariane-3 is scheduled to launch the Arab nations' Arabsat  
1F-1 and the Brazilian SBTS-1 communications satellites into  
geosynchronous orbit on 8 February 1985. 

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## Science and Weapons Daily Review

WESTERN EUROPE: FIRST ARIANE LAUNCH OF THIRD WORLD COMMERCIAL SATELLITES  
SCHEDULED

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Arianespace, the commercial operator of the Ariane series of expendable space launch vehicles, is scheduled to launch an Ariane-3 on 8 February 1985. The launch, from the Kourou space center in French Guiana, will place two communications satellites into geosynchronous orbit. The satellites are the Arab nations' Arabsat 1F-1 and the Brazilian SBTS-1.

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Comment:

The scheduled launch will be the first commercial Ariane launch for a Third World nation. The only other Third World satellite launched on an Ariane was the Indian Apple-1, which was launched as a payload of opportunity during the Ariane test program in June 1981.

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The SBTS-1 and Arabsat 1F-1 will be the first communications satellites owned and operated by Brazil and the Arab nations, respectively. Currently, Brazil is using Intelsat satellites for domestic communications, and the Arab nations have done likewise for their regional communications. Brazil has heavily publicized the launch of SBTS-1 as a sign of its progress in telecommunications over the last 20 years.

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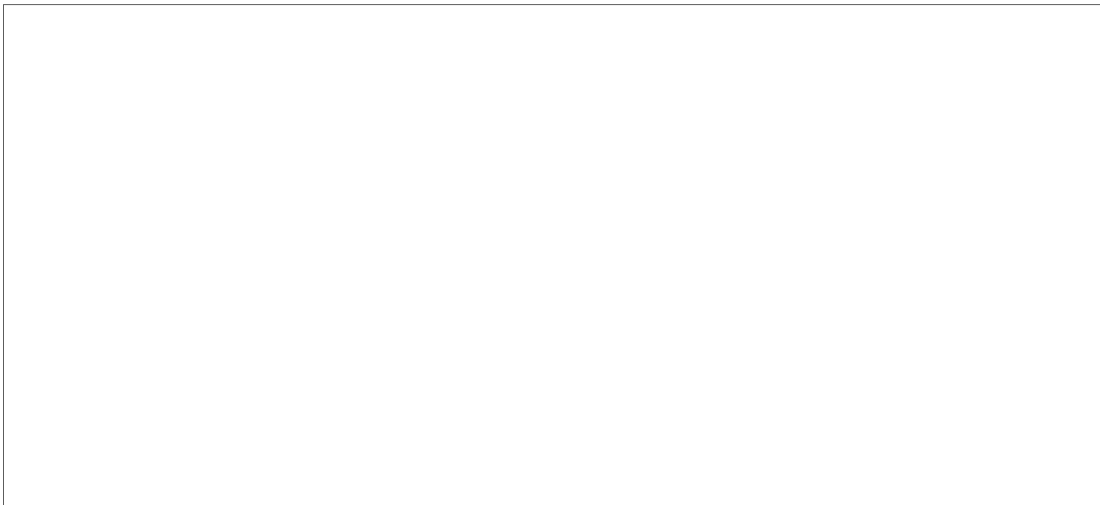


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## USSR: PROSPECTS FOR FUSION-FISSION HYBRID REACTORS [REDACTED]

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Prominent Soviet fusion scientists have stated that the near-term goal of the Soviet controlled nuclear fusion program is to build a fusion-fission hybrid reactor for the production of large amounts of electricity and plutonium. In addition, during the last year they have discussed a proposed design for an experimental tokamak reactor (OTR) that would produce 300 megawatts of net electrical power and 150 kilograms per year (kg/yr) of plutonium (see SWDR for 27 June 1984) [REDACTED]

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A panel of US scientists recently reviewed the progress of the Soviet fusion program and Soviet publications on hybrid reactor concepts. They concluded that the OTR test reactor is likely to be the first hybrid built by the Soviets. The panel estimated that it would take five to 10 years to put the OTR into operation after it received budgetary approval and another five to 10 years to achieve its modest production goals. Although the panel believed that the OTR could be modified to produce up to 900 kg/yr of plutonium, they noted that very extensive and lengthy modifications would be required. [REDACTED]

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## Comment:

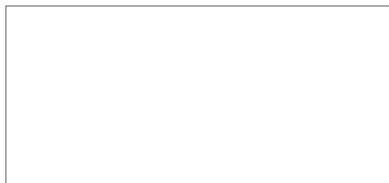
We believe that it will be at least 20 years before the Soviets have a hybrid reactor for the production of plutonium. It is unlikely that the Soviet fusion scientists will be able to obtain budgetary approval for the large and expensive OTR until the Soviets' T-15 tokamak fusion device has operated successfully. The Soviets have encountered numerous problems during the fabrication and construction of the T-15, and it probably will be several years before successful operation is attained. [REDACTED]

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If built in the next 20 to 30 years, the first Soviet hybrid reactor probably will not produce more than 100 kg/yr of plutonium. The parameters quoted for the OTR assume that it will operate 70 percent of the time. Because the OTR would be a complex new experimental device, however, it is more likely that it would operate less than 20 percent of the time,

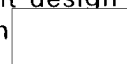
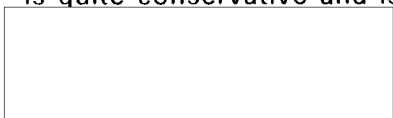


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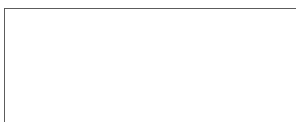


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especially during the first few years of operation. Part of this inefficiency could be overcome by redesigning the OTR; the present design is quite conservative and is not optimized for plutonium production



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